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dicyclohexylamine salt of trifluoroacetylglycylglycine: Weygand, Reiher, *Ber.* **88**, 26 (1955).

Crystals from dil alc. Crystal shape described as small tetrahedral leaves with a lustrous ball in center. Dec 262-264°. pK_1' 3.12; pK_2' 8.17. Heat of combustion: 472.4 kcal/mole. Soluble in hot water; slightly sol in ethanol. Practically insol in ether.

Hydrochloride, $C_4H_8N_2O_3.HCl.H_2O$, crystals from water + ethanol.

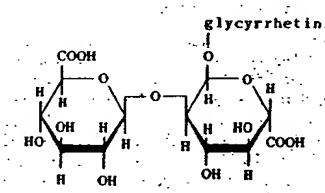
Ethyl ester hydrochloride, crystals from abs ethanol, dec 182°.

USE: In the synthesis of more complicated peptides.

4400. Glycyrrhiza. Licorice; liquorice; sweet root. Dried rhizome and roots of *Glycyrrhiza glabra* L., var. *typica* Regel & Herder (Spanish licorice), or of *G. glabra* L., var. *glandulifera* (Waldst. & Kit.) Regel & Herder (Russian licorice), or of other varieties of *G. glabra* yielding a yellow and sweet wood, *Leguminosae. Habit.* Southern Europe to Central Asia. *Constit.* 6-14% glycyrrhizin (the glucoside of glycyrrhetic acid), asparagine, sugars, resin. Used chiefly in the form of glycyrrhiza syrup. *Incompat.* Acids, metallic salts.

USE: Extract and syrup as pharmaceutic aids (flavor and flavored vehicles).

4401. Glycyrrhizic Acid. *20β-Carboxy-11-oxo-30-norolean-12-en-3β-yl-2-O-β-D-glucopyranuronosyl-α-D-glucopyranosiduronic acid;* glycyrrhizin; glycyrrhizinic acid; glycyrrhetinic acid glycoside. $C_{42}H_{62}O_{16}$; mol wt 822.92. C 61.30%, H 7.59%, O 31.11%. Extraction from *Glycyrrhiza glabra* L.; *Leguminosae:* Karrer, Chao, *Helv. Chim. Acta* **4**, 100 (1921); Ruzicka, Louenberger, *ibid.* **19**, 1402 (1936). From commercial glycyrrhizinum ammoniacale: Tschirch, Cederberg, *Arch. Pharm.* **245**, 97 (1907); Voss *et al., Ber.* **70**, 122 (1937). Revised method of isoln: Conn, Conn, *J. Lab. Clin. Med.* **47**, 20 (1956). Structure: Lythgoe, Trippett, *J. Chem. Soc.* **1950**, 1983. Alternate view: Marsh, Levvy, *Biochem. J.* **63**, 9 (1956). *Review:* Nieman, *Chem. Weekbl.* **48**, 213 (1952). Synthesis of derivatives: Brieskorn, Sax, *Arch. Pharm.* **303**, 905 (1970).

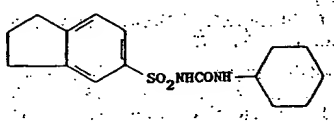


Crystals from glacial acetic acid. Intensely sweet taste. $[\alpha]_D^{17}$ +46.2° (c = 1.5 in alc). Freely sol in hot water, alcohol; practically insol in ether.

Ammonium glycyrrhizinate pentahydrate, $C_{42}H_{65}NO_{16}.5H_2O$, needles from 75% aqueous ethanol, decomp 212-217°. $[\alpha]_D^{20}$ +46.9° (c = 1.5 in 40% ethanol). uv max: 248 nm (ε 11,400). Sol in ammonia water, glacial acetic acid.

Dipotassium salt, $C_{42}H_{60}K_2O_{16}$. *Rizinsan K2 A2.*

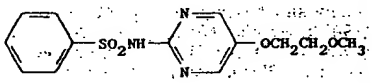
4402. Glyhexamide. *N-[(Cyclohexylamino)carbonyl]-2,3-dihydro-1H-indene-5-sulfonamide; 1-cyclohexyl-3-(5-indanylsulfonyl)urea;* 1-cyclohexyl-3-(5-hydrindenylsulfonyl)urea; SQ 15860; Subose. $C_{16}H_{22}N_2O_3S$; mol wt 322.45. C 59.60%, H 6.88%, N 8.69%, O 14.89%, S 9.95%. Prepd from hydrindene-5-sulfonamide and cyclohexyl isocyanate: Hoehn, Breuer, U.S. pat. 3,097,242 (1963 to Olin Mathieson). Clinical pharmacology: Grinnell *et al., Am. J. Med. Sci.* **253**, 312 (1967).



Crystals from 70% acetone, mp 153-155°.

THERAP CAT: Antidiabetic.

4403. Glymidine. *N-[5-(2-Methoxyethoxy)-2-pyrimidinyl]benzenesulfonamide;* 2-benzenesulfonamido-5-(β-methoxyethoxy)pyrimidine; glycodiazine. $C_{13}H_{15}N_3O_4S$; mol wt 309.35. C 50.47%, H 4.89%, N 13.58%, O 20.69%, S 10.37%. Prepn: Belg. pat. 609,270 corresp to H. Priewe *et al.*, U.S. pat. 3,275,635 (1962, 1966 to Schering, AG); Gutsche *et al., Arzneimittel-Forsch.* **14**, 373 (1964). Series of articles on pharmacology: *ibid.* 377-412. Activity: Losert *et al., ibid.* **23**, 1251 (1973). Metabolism: Soyfer *et al., Chim. Ther.* 5, 441 (1970).

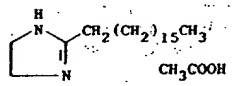


Crystals, mp 152-154°. Soly in ethanol: 0.91%; in toluene: 0.67%.

Sodium salt, $C_{13}H_{14}N_3NaO_4S$, *SH 717, Glyconormal, Gondafon, Lycanol, Redul.* Crystals, mp 221-226°. Sparingly sol in alc. Soly in water at 37°: 70.5%. LD_{50} in mice, rats (g/kg): 1.48, 2.00 i.v.; 5.30, 2.85 orally, Kramer *et al., Arzneimittel-Forsch.* **14**, 377 (1964).

THERAP CAT: Antidiabetic.

4404. Glyodin. *2-Heptadecyl-4,5-dihydro-1H-imidazole monoacetate;* 2-heptadecylglyoxalidine acetate; Crag Fungicide 341. $C_{22}H_{44}N_2O_2$; mol wt 368.59. C 71.68%, H 12.03%, N 7.60%, O 8.68%. Prepn from stearic acid and ethylenediamine: Kiff, U.S. pat. 2,540,171 (1951 to Union Carbide and Carbon).



Light orange crystals, mp 62-68°. d^{20} 1.035. Insol in water, acetone, toluene; sol in isopropanol. The base is a soft greasy wax, mp 94°.

USE: Fungicide.

4405. Glyoxal. *Ethanedial;* biformyl; diformyl; oxalaldehyde. $C_2H_2O_2$; mol wt 58.04. C 41.39%, H 3.48%, O 55.14%. OHCCHO. Prepd by the oxidation of acetaldehyde by nitric or selenious acid: Lubawin, *Ber.* **8**, 768 (1875); Wyss, *Ber.* **10**, 1366 (1877); Kölln, *Ann.* **416**, 230 (1918); Riley *et al., J. Chem. Soc.* 1932, 1881; Ronzio, Waugh, *Org. Syn.* coll. vol. III, 438 (1955); by hydrolysis of dichlorodiethylane: Butler, Cretcher, *J. Am. Chem. Soc.* **54**, 2988 (1932). Review of commercial development: J. F. Bohmfalk *et al., Ind. Eng. Chem.* **43**, 786 (1951). *Review:* A. B. Boese *et al.*, in *Glycols*, G. O. Curme, F. Johnston, Eds. (Reinhold, New York, 1952) pp 125-128.

Yellow prisms or irregular pieces turning white on cooling. d^{20} 1.14. Opaque at 10°, mp 15°, bp_{716} 51°. The vapors are green and burn with a purple flame. *Caution:* Mixture with air may explode! $n_D^{20.5}$ 1.3826. Sol in anhydr solvents; pH of a 40% aq soln: 2.1-2.7; d_4^{20} 1.27. Polymerizes quickly on standing, on contact with water (violent reaction), or when dissolved in solvents contg water. The anhydr polymer changes to the monomer on heating. Solns of the monomer are obtained on heating the polymer with anethole, phenetole, safrole, methyl nonyl ketone, or benzaldehyde. LD_{50} orally in rats, guinea pigs: 2020, 760 mg/kg: Haag, Smyth *et al., J. Ind. Hyg. Toxicol.* **23**, 259 (1941).

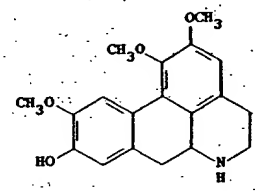
Dihydrate, $(OHCCHO)_3.2H_2O$, cryst powder, nonhygroscopic. More sol in hot water than in cold water. Commercially available in anhydr form as cryst dihydrate, or as 40% aq soln which may contain polymerization inhibitor.

Caution: Moderately irritating to skin, mucous membranes.

USE: In textiles, organic synthesis, glues, biocides.

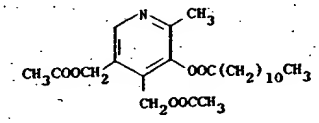
4406. Glyoxal Sodium Bisulfite. *1,2-Dihydroxy-1,2-anedisulfonic acid disodium salt; glyoxal compound with sodium bisulfite.* $C_2H_4Na_2O_8S_2$; mol wt 266.16. C 9.02%, H 1.51%, Na 17.28%, O 48.09%, S 24.09%. Prepn: Rose, Waugh, *Org. Syn.* coll. vol. III, 438 (1955).

5258. Laurotetanine. *5,6,6a,7-Tetrahydro-1,2,10-trimethoxy-4H-dibenzo[de,g]quinolin-9-ol; 1,2,10-trimethoxy-6aα-noraporphin-9-ol;* Litsoeine. $C_{19}H_{21}NO_4$; mol wt 327.37. C 69.70%, H 6.47%, N 4.28%, O 19.55%. From the bark of *Litsea citrata* Blume (*Tetranthera citrata* (Blume) Nees), *Lauraceae* and allied plants. Isoln: Greshoff, *Ber.* 23, 3537 (1890); Filippo, *Arch. Pharm.* 236, 601 (1898). Structure: Barger *et al., Ber.* 66, 450 (1933). Synthesis: Kikkawa, *C.A.* 53, 17163i (1959).



Monohydrate, needles, mp 125°. $[\alpha]_D^{25}$ +98.5°. Practically insol in water; freely sol in alcohol, chloroform, ethyl acetate, slightly in ether.

5259. 3-*O*-Lauroylpyridoxol Diacetate. *Dodecanoic acid 4,5-bis[(acetyloxy)methyl]-2-methyl-3-pyridinyl ester; lauric acid ester with pyridoxol diacetate (ester);* 5-lauroyloxy-6-methyl-3,4-pyridinedimethanol diacetate; 3-lauroyloxy-2-picoline-4,5-dimethanol diacetate; 2-methyl-3-lauroyloxy-4,5-diacetoxymethylpyridine; Epixine; Rosamit. $C_{24}H_{37}NO_6$; mol wt 435.54. C 66.18%, H 8.56%, N 3.22%, O 22.04%. Prepn: Belg. pat. 640,827 (1964 to Soc. Belge Azote Prod. Chim. Marly), *C.A.* 63, 587h (1965).



Crystals, mp 44°. Practically insol in water; sol in ether, chloroform, ethanol, ethylene dichloride.

THERAP CAT: Antiseborrheic.

5260. Lauryl Bromide. *1-Bromododecane;* dodecyl bromide. $C_{12}H_{25}Br$; mol wt 249.24. C 57.82%, H 10.11%, Br 32.06%. $CH_3(CH_2)_{10}CH_2Br$. Prepd by the action of hydrobromic acid on primary *n*-lauryl alcohol in the presence of sulfuric acid: Kamm, Marvel, *Org. Syn.* 1, 7 (1921).

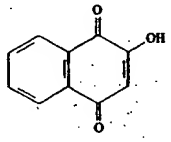
Liquid. bp_{45} 175-180°. Insol in water. Sol in alc, ether.

5261. Lavender. Garden lavender; true lavender. Flowers of *Lavandula officinalis* Chaix (*L. vera* DC.), *Labiatae. Habit.* Mediterranean region. *Constit.* Volatile oil.

USE: For fumigating; in perfumery; to keep moths from clothes; manuf oil lavender. Pharmaceutic aid (perfume).

5262. Lawrencium. Lr; formerly Lw; at. wt (longest-lived known isotope, $T_{1/2} \sim 3$ minutes) 260; at. no: 103; valence 3. Known isotopes 255-260. Discovery of first isotope claimed by Ghiorso *et al., Phys. Rev. Letters* 6, 473 (1961). Prepared by bombardment of californium with boron ions; originally assigned mass number 257; later changed to 258 ($T_{1/2}$ 4.2 seconds, α-emitter): Eskola *et al., Phys. Rev. C* 4, 632 (1971). Prepn of ^{256}Lr ($T_{1/2} \sim 45$ seconds) by irradiating ^{243}Am with ^{18}O ions: Donets *et al., At. Energ. (USSR)* 19, 109 (1965), *C.A.* 64, 1542c (1966). Prepn of isotopes 255-260 by bombardment of transuranium elements with heavy ions: Eskola *et al., loc. cit.* Reviews of history, prepn and properties: C. Keller, *The Chemistry of the Transuranium Elements* (Verlag Chemie, Weinheim, English Ed., 1971) pp 609-612; Silva, "Trans-Curium Elements" in *MFP Int. Rev. Sci.: Inorg. Chem., Ser. One* vol. 8, A. G. Maddock, Ed. (University Park Press, Baltimore, 1972) pp 71-105; Ghiorso, *Handb. Exp. Pharmakol.* 36, 691-715 (1973); Taylor, *ibid.* 717-738.

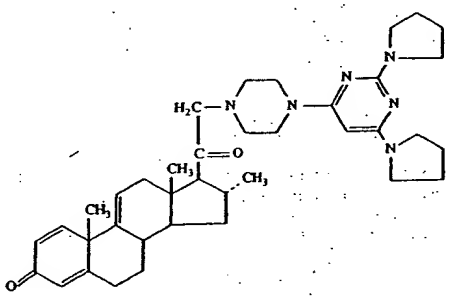
5263. Lawsone. *2-Hydroxy-1,4-naphthalenedione; 2-hydroxy-1,4-naphthoquinone.* $C_{10}H_6O_3$; mol wt 174.15. C 68.96%, H 3.47%, O 27.56%. From leaves of *Lawsonia inermis* L. and *L. alba* Lam., *Lythraceae:* Latif, *Indian J. Ag. Sci.* 29, No. 2-3, 147 (1959), *C.A.* 55, 14828g (1961). Synthesis: Fieser, *J. Am. Chem. Soc.* 70, 3165 (1948); Jam. Seshadri, *Proc. Indian Acad. Sci.* 35A, 233 (1952); Eister Müller, *Ber.* 92, 2071 (1959).



Yellow prisms from acetic acid, dec 195-196°.

THERAP CAT: Ultraviolet screen.

5264. Lazaroids. Novel class of nonglucocorticoid 21-aminosteroid antioxidants which inhibit lipid peroxidation. A representative compound is known as *U74006F.* Prepn: J. M. McCall *et al.*, PCT Int. pat. Appl. 87 01,703 (1987 to Upjohn), *C.A.* 108, 6287u (1987). Inhibition of iron-dependent lipid peroxidation *in vitro:* J. M. Braughler *et al., J. Biol. Chem.* 262, 10438 (1987). Endocrinological profile in mice: J. M. Braughler *et al., J. Pharmacol. Exp. Ther.* 244, 423 (1988). HPLC determn in plasma: J. W. Cox, R. H. Pullen, *J. Chromatog.* 424, 293 (1988). *In vivo* attenuation of vasogenic brain edema: E. D. Hall, M. A. Travis, *Brain Res.* 451, 350 (1988). Effects on experimental head injury in mice: E. D. Hall *et al., J. Neurosurg.* 68, 45 (1988); in post-traumatic spinal cord ischemia in cats: E. D. Hall, *ibid.* 462. Review of development and potential clinical applications in trauma and stroke: J. M. McCall *et al., Acta Anaesthesiol. Belg.* 38, 417-420 (1987).



U74006F

U74006F, $C_{39}H_{56}N_6O_5S$, *21-[4-(2,6-di-1-pyrrolidinyl-pyrimidinyl)-1-piperazinyl]-16α-methylpregna-1,4,9(11)-triene-3,20-dione monomethanesulfonate.* Monohydrate, mp 181-185° (dec). uv max: 234, 285 nm (ε 52000, 17000).

5265. Lazurite. Lapis lazuli; lasurite. Composition $(Na,Ca)_4(AlSiO_4)_3(SO_4,S,Cl)$, E. S. Dana, *A System of Mineralogy* (John Wiley, New York, 6th ed., 1901) pp 432-433; S. Hurlbut, Jr., *Dana's Manual of Mineralogy* (John Wiley, New York, 17th ed., 1959) p 503.

Blue, blue-violet or greenish-blue, translucent, cubic dodecahedral crystals. d 2.4. Dec by HCl with pptn of S and evolution of H_2S.

USE: In manuf of vases, ornamental furniture, mosaics, paints, jewelry.

5266. LBF. Lactobacillus bulgaricus factor. Growth factor occurring in products derived from both animal and plant sources and in culture filtrate of certain microorganisms: Williams *et al., J. Biol. Chem.* 177, 933 (1949); Vitale *et al., Arch. Biochem. Biophys.* 34, 409 (1951); Peters *et al., Am. Chem. Soc.* 75, 1688 (1953). Contains pantetheine which is oxidized during purification to the disulfide, pantethine *q.v.* Natural occurrence of several different forms. LBF each being a mixed disulfide of pantetheine: Rasmussen *et al., Proc. Soc. Exp. Biol. Med.* 73, 658 (1950); Brown, Snell, *J. Biol. Chem.* 198, 375 (1952). Coenzyme A digested with intestinal phosphatase shows 2-4 LBF-active components: Long, Williams, *J. Bacteriol.* 61, 195 (1951). Re-